

Amendments to the Claims

Applicants cancel claims 41, 43-47, 49, 51-77, 79, and 80; amend claims 38, 40, 42, 48, 50 and 78; and provide new claims 81-95. Changes to the claims are provided in the below listing of claims.

Listing of Claims

1-37 (Canceled)

38. (Currently amended) A transformed bryophyte cell from *Physcomitrella patens* that comprises i) a ~~disrupted dysfunctional~~ fucosyl transferase nucleotide sequence and ii) a ~~disrupted dysfunctional~~ xylosyl transferase nucleotide sequence, wherein the bryophyte cell is incapable of forming N-linked glycans with 1,3-linked fucosyl and 1, 2-linked xylosyl residues.

39. (Previously presented) A transformed bryophyte cell according to claim 38, wherein the cell further comprises a nucleotide sequence operably linked to an exogenous promoter that drives expression in the bryophyte cell, wherein said nucleotide sequence encodes a glycosylated polypeptide that is expressed in the bryophyte cell.

40. (Currently amended) A transformed bryophyte cell according to claim 39, wherein said glycosylated polypeptide comprises ~~animal~~ a human glycosylation pattern[[s]].

41. (Cancelled)

42. (Currently amended) A transformed bryophyte cell according to claim 38, further comprising a nucleotide sequence operably linked to an exogenous promoter that drives expression in the bryophyte cell, wherein said nucleotide sequence encodes a functional ~~mammalian galactosyltransferase~~ human beta 1, 4 galactosyltransferase that is expressed in the bryophyte cell.

43 - 47 (Cancelled).

48. (Currently amended) A transformed bryophyte cell according to claim 39, wherein the glycosylated polypeptide is ~~selected from the group consisting of a polypeptide having a primary amino acid sequence of a human glycosylated polypeptide or, a primary amino acid sequence of a non-human mammalian glycosylated protein, a primary amino acid sequence of an antibody or an active fragment thereof, and a primary amino acid sequence of a non-mammalian glycosylated polypeptide.~~

49. (Cancelled)

50. (Currently amended) A transformed bryophyte cell according to claim 48, wherein the glycosylated polypeptide is selected from the group consisting of human insulin, preproinsulin, vascular endothelial growth factor (VEGF), proinsulin, glucagon, ~~interferon such as~~ alpha-interferon, beta-interferon, gamma-interferon, blood-clotting factors ~~selected from~~ Factor VII, VIII, IX, X, XI, and XII, ~~fertility hormones including~~, luteinising hormone, follicle stimulating hormone, ~~growth factors, including~~ epidermal growth factor, platelet-derived growth factor, granulocyte colony stimulating factor, prolactin, oxytocin, thyroid stimulating hormone, adrenocorticotrophic hormone, calcitonin, parathyroid hormone, somatostatin, erythropoietin (EPO), ~~and enzymes, such as~~ beta-glucocerebrosidase, haemoglobin, serum albumin, and collagen.

51-77 (Cancelled)

78. (Currently amended) A bryophyte plant or bryophyte tissue comprising a transformed bryophyte cell according to claim 38.

79-80 (Cancelled)

81. (New) A transformed bryophyte cell according to claim 38, wherein said disrupted fucosyl transferase nucleotide sequence and said disrupted xylosyl transferase nucleotide sequence are each independently disrupted by insertion of exogenous nucleic acids or by at least partial deletion of endogenous nucleic acids.

82. (New) A transformed bryophyte cell according to claim 48, wherein the glycosylated polypeptide is selected from the group consisting of an interferon, a fertility hormone, a growth factor and an enzyme.

83. (New) A transformed bryophyte cell according to claim 39, further comprising a nucleotide sequence operably linked to an exogenous promoter that drives expression in the bryophyte cell, wherein said nucleotide sequence encodes a functional human beta 1, 4 galactosyltransferase that is expressed in the bryophyte cell.

84. (New) A transformed bryophyte cell according to claim 83, wherein said glycosylated polypeptide comprises a human glycosylation pattern.

85. (New) A transformed bryophyte cell according to claim 84, wherein said glycosylated polypeptide is a polypeptide having a primary amino acid sequence of a human glycosylated polypeptide or a primary amino acid sequence of an antibody or an active fragment thereof.

86. (New) A transformed bryophyte cell according to claim 85, wherein the glycosylated polypeptide is selected from the group consisting of human insulin, proinsulin, vascular endothelial growth factor (VEGF), proinsulin, glucagon, alpha-interferon, beta-interferon, gamma-interferon, blood-clotting factors VII, VIII, IX, X, XI, and XII, luteinising hormone, follicle stimulating hormone, epidermal growth factor, platelet-derived growth factor, granulocyte colony stimulating factor, prolactin, oxytocin, thyroid stimulating hormone, adrenocorticotrophic hormone, calcitonin, parathyroid hormone, somatostatin, erythropoietin (EPO), beta-glucocerebrosidase, haemoglobin, serum albumin, and collagen.

87. (New) A bryophyte plant or bryophyte tissue comprising a transformed bryophyte cell according to claim 83.

88. (New) A transformed bryophyte cell from *Physcomitrella patens* that comprises a double knockout of fucosyl transferase and xylosyl transferase that results in modified N-glycans without detectable 1, 3-linked fucosyl and 1, 2-linked xylosyl residues.

89. (New) A transformed bryophyte cell according to claim 88, further comprising a nucleotide sequence operably linked to an exogenous promoter that drives expression in the bryophyte cell, wherein said nucleotide sequence encodes a functional human beta 1, 4 galactosyltransferase that is expressed in the bryophyte cell.

90. (New) A transformed bryophyte cell according to claim 88, wherein the cell further comprises a nucleotide sequence operably linked to an exogenous promoter that drives expression in the bryophyte cell, wherein said nucleotide sequence encodes a glycosylated polypeptide that is expressed in the bryophyte cell.

91. (New) A transformed bryophyte cell according to claim 90, wherein said glycosylated polypeptide comprises a human glycosylation pattern.

92. (New) A transformed bryophyte cell according to claim 91, wherein said glycosylated polypeptide is a polypeptide having a primary amino acid sequence of a human glycosylated polypeptide or a primary amino acid sequence of an antibody or an active fragment thereof.

93. (New) A transformed bryophyte cell according to claim 92, wherein the glycosylated polypeptide is selected from the group consisting of human insulin, proinsulin, vascular endothelial growth factor (VEGF), proinsulin, glucagon, alpha-interferon, beta-interferon, gamma-interferon, blood-clotting factors VII, VIII, IX, X, XI, and XII, luteinising hormone,

follicle stimulating hormone, epidermal growth factor, platelet-derived growth factor, granulocyte colony stimulating factor, prolactin, oxytocin, thyroid stimulating hormone, adrenocorticotrophic hormone, calcitonin, parathyroid hormone, somatostatin, erythropoietin (EPO), beta-glucocerebrosidase, haemoglobin, serum albumin, and collagen.

94. (New) A transformed bryophyte cell according to claim 92, wherein the glycosylated polypeptide is selected from the group consisting of an interferon, a fertility hormone, a growth factor and an enzyme.

95. (New) A bryophyte plant or bryophyte tissue comprising a transformed bryophyte cell according to claim 88.